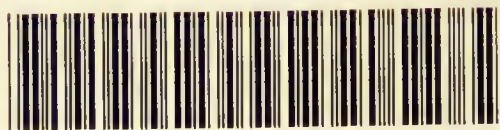


WARK, D.
Prevention
and cure
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Swedish
movement cure.
1879.

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Edgar F. Cyriac

PREVENTION AND CURE
OF
CONSUMPTION

BY THE
SWEDISH-MOVEMENT CURE.

WITH
DIRECTIONS FOR ITS HOME APPLICATION.

BY
DAVID WARK, M. D.,
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AND DEFORMITIES, SARATOGA SPRINGS, N. Y.

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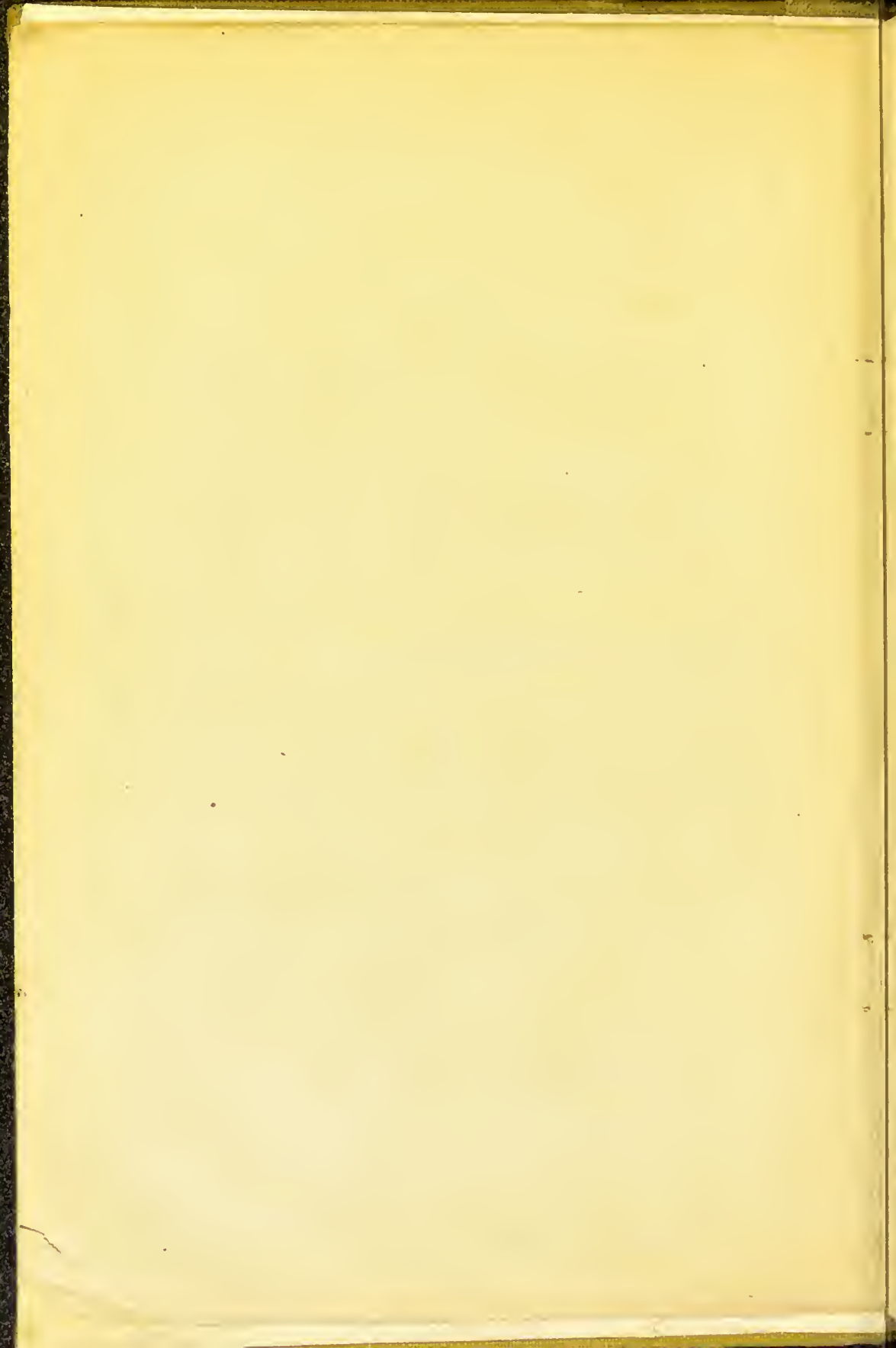
P R E F A C E.

THE object in publishing this pamphlet is to attract attention to what the author believes to be the true method for the cure of pulmonary consumption, and to furnish information whereby it can be made available for home treatment, so that the multitude of persons suffering from this disease, to whom the immediate professional care of a physician practicing the Movement-Cure is inaccessible, may also receive the benefits it is so well adapted to confer.

Nothing can savor less of empiricism than the practice here advocated, because all its principles are simple deductions from physiological science, and its treatment is only the practical application of demonstrated physiological truths.

It is, therefore, placed before the public with the conviction that it only requires to be known in order to be highly appreciated and extensively employed as a medical resource.

DAVID WARK, M. D.



HISTORY

OF THE

MOVEMENT-CURE.

THE value of bodily movements for the purposes of physical development and the cure of diseases has been appreciated from a very early period. Numerous medical authorities, of great eminence and learning, both in ancient and modern times, have advocated the use of special movements, in order to correct special diseased conditions. They were, however, but imperfectly understood, and little practiced, until the time of Peter Henry Ling, of Stockholm, Sweden, who, while suffering from gout in his arm, conceived the idea that it might be relieved by exercise. With this object in view, he took lessons in fencing, and was gratified by the cure of his disease. The success of this experiment induced him to think that other maladies could also be cured by suitable combinations of movements. The realization of this idea now became the grand object of his life; he devoted himself to its study with untiring energy, and succeeded in demonstrating that exercise is not only

useful to preserve health, but that it is, when properly understood, a potent remedy for disease.

He opened up a new field for physical investigation, hitherto almost unknown even to the most learned physicians and physiologists. To him, therefore, belongs the credit of having discovered the value of medical movements; of having arranged them into a complete scientific system, indicating how they should be prescribed, and rendered highly curative in various chronic affections.

Since the time of Professor Ling, institutions, founded on the principles he inculcated, have extended throughout Europe. During the last few years, Ling's system has been introduced into the United States. Still, the progress of this art has not been commensurate with its great value, mainly because of the opposition with which it has had to contend through popular and professional ignorance. Nevertheless, this system of curative movements is now regarded by those members of the profession who are acquainted with its merits as being a legitimate mode of practice, applicable to many forms of chronic disease and cases of deformity. In fact, wherever it is introduced, it always takes a very high rank as a healing agent.

GENERAL PRINCIPLES.

PHYSIOLOGICAL.

IN forming a just estimate of any mode of medical treatment, it is necessary to inquire whether it accords with, or is opposed to, those physiological laws that rule in our being. Medical treatment is valuable just so far as it is capable of controlling the nutritive process, so that a healthy action will be induced, instead of a diseased condition. In order to show how localized movements do this, a sketch of these processes will be necessary.

THE NUTRITIVE PROCESSES.—Animal life is carried on by virtue of certain internal functions—these are digestion, by which food is fitted for absorption; this process introduces it into the blood; the circulation of the vital fluid carries this food to every part of the body to build it up; respiration supplies fresh air, or rather its active principle, oxygen gas, to the blood, by which it is vitalized and purified; secretion supplies various juices essential to nutrition, as the gastric juice; excretion purifies the body of waste matters—of this the kidneys are an example;

assimilation appropriates the nutriment contained in the blood to supply the place of worn-out atoms. By these vital operations, the integrity of the body is preserved during its interstitial changes.

INTERSTITIAL CHANGES OF THE BODY.—The living body is the scene of constant change; its members cannot act without wearing away; the evolution of every thought causes a destruction of brain tissue; a muscle contracts only at the expense of a portion of its substance. Thus it is absolutely true that our bodies are ever dying. The difference between this ever-occurring death and final dissolution simply consists in the fact that, in the first instance, no sooner does one atom die in a healthy, well-fed person or animal, than a living atom is supplied from the blood to take its place; in the second instance, the whole fabric returns to dust as it was.

Regular and sufficient quantities of air, water and food are essential to supply the ever-wasting tissues that are worn out and renewed with a rapidity that may well excite our wonder. An adult man requires more than one ton and a half of materials in one year, and in that time wastes it all away. He consumes eight hundred pounds of solid food, absorbs from the atmosphere eight hundred pounds of oxygen, and imbibes fifteen hundred pounds of water in various forms of drink. After these materials pass through a determinate series of changes in the system, they are finally expelled as waste matters.

"What, then," says Dr. Draper, "is man? Is he not a form, as is the flame of a lamp, the temporary result and representative of myriads of atoms that are fast passing through states of change; a mechanism, the parts of which are uneasingly taken asunder and as unceasingly replaced? The appearance of corporeal identity he presents, from year to year, is only an illusion; he begins to die the moment he begins to breathe, one particle after another is removed away, interstitial death occurring even in the inmost recesses of the body."

HEALTH.—When food is received into the system it undergoes two separate and distinct series of changes—progressive and retrogressive. In the first series, the food is digested, absorbed, changed into living blood, and then becomes incorporated with our bodies, so that the food we consumed yesterday now forms part of those organs with which we see, think, hear, feel and move. After this matter has remained in the body a certain length of time as living tissue, it begins to pass down through retrogressive metamorphosis, by which it is finally fitted to be expelled from the body as inorganic matter. When these two series of changes occur perfectly in regular order, the result is perfect health; thus the standard of health enjoyed by any individual is to be measured by the perfection with which his nutritive processes are carried on. It may, therefore, be justly said, that normal, functional action, resulting in proper physical

nutrition, constitutes perfect health, or, in other words, health is that condition of the body in which the supply and waste of the system occur with due energy.

DISEASE.—The ideas popularly entertained concerning the nature of disease are exceedingly crude. Diseases are usually regarded as being separate, independent entities, which, in some mysterious manner, find their way into the human body, like wolves into a sheepfold, filling it with ruin and death. This is, however, far from being the truth. We have seen health to be normal, functional action; perfect nutrition, a condition of the body in which the vital capacities are adequate to the perfect elaboration of nutritive materials, and the complete removal of all the waste matter constantly accruing in the system. Disease, on the other hand, is a condition in which these necessary processes go on imperfectly, giving rise, in one case, it may be, to the cells peculiar to cancerous growths; in another, to the tubercular matter we find deposited in the lungs of consumptives. The cure of disease is thus reduced to a simple question of nutrition. Whatever agency will most readily control and harmonize the supply and waste of the body, must truly be the best means for the removal of ill health, at least in all chronic forms.

INFLUENCE OF THE VITAL POWER IN THE REMOVAL OF DISEASE.—The All-wise Maker of the human

body foresaw that his creatures, during their physical existence, would be exposed to many injuries and influences productive of disease. He therefore endowed them with a conservative healing power, which is ever in active operation from the moment we enter on life until we draw our latest breath, continuing, more or less perfectly, the action of the vital functions, defending us from the influence of, and neutralizing those morbid causes that tend to extinguish life. Without such an endowment, life itself would become a burden, and be prematurely extinguished by a constant accumulation of injuries. Without it, no wound would ever heal, no disease be cured.

Every one has noticed improved health follow from a change of diet or air, the abandonment of an injurious habit, or of an unwholesome occupation. Increased health, under such circumstances, is due exclusively to the recuperative power of nature. In truth, if invalids would but remove all health-opposing influences surrounding them, they would be surprised at the great things this healing power would accomplish for them in the restoration of health.

It is admitted, on all hands, that the true province of the healing art is simply to assist nature; but in seeking to accomplish this object, the physician, practicing the popular mode of treatment, has often to be content to do some injury in order to subsequently accomplish a greater good. But the Movement-Cure practice has no such drawback; the impressions it produces are entirely in the direction of physiological

growth and development. It enables the spontaneous tendencies of the system towards health to act more effectively ; it directs the physical energies into precisely those channels in which they may be most needed ; it enables the system to develop and maintain its forces in greater amount, and its healing effects are produced without unduly wasting the vital powers. Therefore the curative results secured by movements are superior to, and more enduring than those attained by the common modes of practice.

In attempting the cure of disease, the physician will be really successful in proportion as he adheres to nature. If he would strengthen it, it must be by supplying materials suited to the wants of the system, and helping the vital powers to use them properly. If he would purify, it must be as nature accomplishes that important object, by favoring the introduction into the system of an adequate supply of oxygen, increasing the affinity of the blood therefor, and by assisting its proper action on the tissues.

No medical treatment can be so permanently valuable as that which is *directly* conducive to vigorous, vital action. These ideas are far from being new ; on the contrary, they are nearly as old as the practice of medicine itself, and might be supported by quotations from the writings of almost every eminent physician from the earliest times to the present day.

THE MOVEMENT-CURE.—The Creator imposed on man the necessity to labor. He said, "By the sweat

of thy face shalt thou eat bread." Daily muscular exertion is essential to man's physical well-being. Those whose position in life is such that they are not called on to perform bodily labor must regularly bring their muscles into vigorous action, if they would enjoy good health. The fact is aptly expressed by the proverb, "The poor man must work to find food for his stomach; the rich man must work to find a stomach for his food." The superior health enjoyed by those accustomed to active out-door life, often in spite of many injurious habits, conclusively proves the value of exercise for the preservation of physical vigor. These universally recognized truths frequently induce physicians to prescribe exercise for consumptive and other invalids, without instructing them as to the kind or quality adapted to their condition. They forget that exercise has its laws that cannot be disregarded, at least by invalids. It would be almost as wise to expect good results by ordering a sick man in need of medicine to enter a drug-shop and swallow a dose of the first mixture he saw, as to advise patients indiscriminately to exercise. This, as usually indulged in by invalids, is much more frequently followed by bad than good results. For instance, a consumptive is advised to take exercise; he accordingly makes what is to him a dangerous experiment; he walks, runs, swings dumb-bells, practices gymnastics: the result is that, too often, instead of being benefited, his worst symptoms are aggravated, his cold extremities become colder, and his oppressed breath-

ing still more labored. He is thus certain to inflict on himself severe, perhaps irreparable injury, simply because ignorant of the principles involved in the use of exercise as adapted to his particular case. In order that exercise may become curative it must be prescribed in accordance with the indications, and applied so as to secure all the good results without any of the bad effects so often experienced by invalids. It then becomes a medical treatment of extraordinary efficacy. The Movement-Cure reduces the principles of exercise to perfect order, shows its great therapeutic value when its principles are properly understood and applied, and sheds light on this hitherto sadly-neglected but valuable branch of the healing art.

This practice is called the Movement-Cure, not because various motions and positions are given to the body in its application, but because by it motion is produced in the materials composing the body which leads to the removal of disease.

It will be readily seen that the word *exercise* is altogether inadequate to convey the meaning of the term *movement*.

PASSIVE MOVEMENTS are those in which the patient unresistingly receives a motion communicated to him by the operator. Kneadings, rotatings, fullings, etc., belong to this class. Instead of inducing fatigue, they have a strong tendency to relieve it, as well as remove stiffness, soreness and pain.

ACTIVE MOVEMENTS are those in which the patient is required to exert his will-power and put forth muscular strength. They derive their peculiar healing effect from the manner in which they are performed.

1st. By being executed slowly.

2d. By localization ; that is, confined to a single muscle or group of muscles, while the remainder of the body not actually engaged is at rest.

3d. By offering resistance to the patient's effort.

Little, if any, curative effects can be expected from the application of active movements if these conditions are neglected. The advantages gained by their observance will be apparent when we briefly consider the structure and function of muscular tissue, and the laws governing the expenditure of nervous power.

The voluntary muscles consist of bundles of fibres inclosed in a delicate sheath of areolar or connective tissue. Each bundle is made up of numerous smaller ones, inclosed in a similar covering : these, again, are made up of primitive fasciculi, which being composed of a row of muscle-cells, presents the appearance, under the microscope, of a string of minute beads. When these cells are acted on by their appropriate stimulus they contract, and the fibril is shortened. The whole phenomena of muscular contraction thus brought about is effected by the separate contraction of the fibres composing this tissue. Muscle-fibres act only through a portion of their length at the same instant ; the action travels along the fibril in waves,

each part becoming relaxed as the action passes onwards. The power exerted by a contracting muscle is due, not so much to the vigor with which the acting fibrils contract, as to the number brought into action at the same instant.

Every act we perform, whether mental or physical, requires the expenditure of nervous force. The system possesses the capacity to develop this force at a given rate, depending on the vigor with which the vital functions are carried on. In health, the capacity for its evolutions is always greater than in disease. In health, the system has a reserve fund, after supplying all ordinary needs. In disease, the production of nervous force is always diminished; it is, therefore, often inadequate to the demands made on it. These facts explain why healthy persons experience fatigue only after severe exertion, while invalids are readily exhausted.

A much greater amount of nervous power is expended in the execution of rapid than of slow motions. For instance, if the hand is rapidly thrust out and drawn in, fatigue is much sooner experienced than if the same actions were done slowly. This is due to the greater intensity of the effort in the former than in the latter instance.

Taking advantage of these physiological truths, active movements are localized and performed slowly against resistance, because, by these means, all the fibrils of the acting muscles are made to enter into action throughout their whole length. We thus

secure for the invalid the invaluable healing effects of complete muscular contraction, inducing a maximum amount of nutritive changes at a minimum expenditure of nervous power. This is husbanded, and serves as an important agent in effecting a cure.

THE
INFLUENCE OF THE MOVEMENT CURE
IN
Harmonizing and Stimulating the Vital Functions.

Movements increase the Vigor of the Respiratory Power.

THE introduction into the system of an adequate quantity of oxygen is most important. This vital gas serves many important purposes in the body. One of the most interesting is its action on the blood. Oxygen, in being associated with venous blood in the lungs, revitalizes that fluid, changing it instantly from dark-red venous to bright scarlet arterial blood. In fact, all the complicated changes in the system essential to life require, in the blood, an abundant supply of oxygen.

When this gas is once in the organism, it gives rise to many chemical and vital changes; but the act of breathing, by which it is obtained, is purely mechanical, consisting simply in drawing into the lungs atmospheric air, which, after losing a portion of its oxygen and becoming charged with carbonic acid, is again forced out. The perfection with which these motions constituting the respiratory act are

carried on depend mainly on the capacity of the chest, the mobility of its walls, the resiliency of the lung tissue, and the power of the respiratory muscles. When these conditions are defective, oxygen is supplied to the blood in diminished quantities; the vital functions languish, and the health rapidly deteriorates. The judicious use of localized movements is a powerful means to enlarge the circumference of the chest, increase the motions of its walls, and invigorate the respiratory muscles, thereby rendering the breathing deep and tranquil, thus supplying a powerful but perfectly physiological stimulus to the vital functions, whose integrity so largely depends on a sufficiency of oxygen.

Movements Control the Circulation of the Blood.

The principal forces concerned in maintaining the circulation are the propulsive power of the heart, the compression exerted on the blood-vessels by muscular contraction, and the affinity of the blood for the walls of the vessels in which it moves. The heart is popularly believed to be the sole cause of circulation. This is an error. Its function simply consists in filling the great arteries, thus constantly presenting fresh portions of blood to the capillaries through which it flows, mainly by an affinity it has for the sides of these minute vessels. This physiological law is beautifully illustrated by the following simple experiment. If the end of a very fine glass

tube be dipped into some colored water, the liquid will be seen to rise in the tube several inches. The power that raises the water is called capillary attraction—the water ascends because it has an affinity for the walls of these minute vessels. “So likewise,” says Dr. Draper, “the capillary circulation is maintained by a like affinity which the blood has for the walls of these hair-like vessels.” This affinity is only possessed in a healthy degree by pure, properly-constituted blood. It is always below par in a state of chronic disease.

The vital contraction of muscle also powerfully aids the circulation. During muscular contraction the blood is forced onwards into the veins, through which it must pass to the heart. When the muscle relaxes, the pressure is removed from the vessels ; they are then instantly refilled with fresh blood from the arteries. This effect is greatly increased by active, localized movements. When the action is confined to one part of the body, the remainder being at rest, a strong current of blood is thus made to flow to the part, in obedience to a well-known physiological law.

But movements not only render the circulation perfect for the time being, they have the power to purify the blood, as we shall see ; and thus establish that condition on which vigorous capillary circulation mainly depends.

Therefore the distribution of the vital fluid can be controlled by movements, so that it can be conveyed in greater quantity to any organ or part suffering

from an insufficient supply. The blood can also be drawn away from any member clogged by the presence of too much. Congestions, the constant attendants of chronic diseases, are thus readily dissipated by movements.

Movements Purify the Blood and Favor the Removal of Waste Matters from the Body.

In animals the blood performs a double duty. It is the vehicle by which nutriment is carried to all parts of the system, as well as the means for removing its wasted portions. It has been already stated that about one ton and a half of material is required for physical nutrition by a man in the course of a year, and that, in a like period of time, it is all removed from the system after it has served its allotted purposes. When we consider that the whole of this immense mass is both introduced into and removed from the body through the agency of the vital fluid, it is evident it must be constantly undergoing rapid changes. In health these waste matters are never allowed to accumulate; they are promptly removed as fast as they arise.

The blood receives from the digestive apparatus large quantities of nutritive materials, and, by the respiratory organs it is supplied with oxygen. These matters cannot be retained in the blood without injuring its quality and destroying the health. Each of the variously-constituted parts of the body is with-

drawing the peculiar supplies necessary to its wants. The muscles, the bones, the nerves, etc., constantly receive from the blood the substances necessary to their growth. The vital fluid thus preserves its proper constitution by giving up as fast as it receives. But the blood cannot give up the nutritive substances it contains, with a healthy degree of rapidity, except there exist a vigorous demand in the tissues of the body for such substances. When this demand is sluggish, this being always the case in chronic disease, duplicated movements powerfully stimulate the system to demand, and raise its capacity to appropriate, the nutriment contained in the blood. Movements are, therefore, a most efficient means for restoring the normal constitution of the vital fluid when it is impaired.

The blood is also, as we have seen, charged with the removal of waste matters; but, before the products of decay can be removed, they must be combined with a proper quantity of oxygen, by which they are reduced to simple inorganic forms, as carbonic acid, water, urea, sulphates of soda and potash, phosphates of lime and magnesia, etc., these chemical changes, brought about through the agency of oxygen, being essential to facilitate the complete removal of waste products from the body.

When the respiratory power is imperfect, the affinity of the blood for oxygen deficient, or the capillary circulation sluggish, it is evident the blood must rapidly deteriorate. But localized movements are a most efficient remedy for all this; in fact, they are the

most physiological and efficient of all known means for the purification of both the solids and fluids of the body.

Movements Stimulate the Process of Absorption.

After food has been digested, although still in the digestive cavity, it is still really external to the animal system. It must pass by absorption through the membranes lining the alimentary tube into the blood, to be distributed to every part. The passage of liquids through membranes is illustrated by the following striking experiment: If a bladder filled with alcohol is plunged into a vessel of water, the water will pass through the pores of the bladder to mix with the alcohol. This action, strange to say, continues with a force equal to the pressure of several atmospheres, until the two liquids are intimately mingled. It then ceases entirely. The condition on which this current depends is, that the liquids on the opposite sides of the membrane shall be unlike. For instance, alcohol on the one side, water on the other. A precisely similar state of things is essential to the healthy absorption of nutritive matters. On one side of the membrane lining the alimentary tube, we have the digested food; on the other side, we have the lacteals and blood-vessels, with their contents; the latter take up that portion of the food which is soluble in water, the former absorb only matters in a state of emulsion.

Localized movements maintain the condition on

which vigorous absorption depends, by pressing onwards the contents of the absorbing vessels, in this way effecting their renewal movements ; they therefore afford this function a powerful but entirely natural stimulus.

Movements Improve the Quality of Depraved Secretions.

The organs whose function it is to produce the numerous bodily secretions are called glands : these consist, for the most part, of a sac, on the interior of which is spread a network of arterial capillary vessels through which the blood flows into a similar plexus of veins. The gland separates the substance it is intended to produce from the arterial blood. Two conditions are essential to the production of pure secretions. First, the blood from which the secreted juices are drawn must be pure ; second, it is essential that the vital fluid circulate perfectly through the capillary system. I have endeavored to show that localized movements are effectual both to purify the blood and induce a perfect circulation. Therefore the medical treatment here advocated secures the conditions necessary to the production of healthy secretions.

Movements Invigorate the Digestive Functions.

Digestion is a complex process by which food, in being submitted to mastication and the action of the various digestive juices, is reduced to a soluble condition, being thereby fitted to enter the current of the

blood circulation, into which all nutritive matters must pass preparatory to their assimilation.

The stomach is destined to receive food, but cannot retain it without injury if digestion does not begin as soon as food is received into the stomach. The heat and moisture of that viscus rapidly produce chemical changes leading to the extrication of noxious gases.

Vigorous digestion depends on the possession of pure blood circulating perfectly, from which alone can be elaborated digestive juices of a proper quality. There must also exist in the system an active demand for the digested food. When these conditions are imperfectly localized, movements can effect their restoration. They are, therefore, valuable means for invigorating the function of digestion.

Movements Stimulate the Organizing Process.

Although food may have been received into the stomach and submitted to all the chemical and vital operations requisite to its perfect digestion and conversion into blood, still it has not finally accomplished its mission until it has become part of the living body by the wonderful process of assimilation.

After chyle is absorbed, it passes through the mesenteric glands, in which arise the chyle corpuscles. For the sake of illustration, let us trace one of these corpuscles to its final destination. From the mesenteric gland it passes through the thoracic duct into

the venous circulation, with which it passes through the right side of the heart into the lungs. Here, by the action of the oxygen of respiration, it becomes a living, red, blood globule, which, leaving the lungs, passes through the left side of the heart into the arterial system, thence into the capillaries. Through the delicate walls of these vessels its nutritious elements dart, like rays of light through glass, to supply the place of some worn-out atom.

But the destruction of organized matter and the removal of the waste thus arising must precede this act of growth. The Movement-Cure is capable not only to effect these objects, but its application also insures the high vitalization of the nutritious materials requisite for bodily renovation. It is, therefore, a valuable medical resource when the organizing process is defective.

The Afore-mentioned Effects.

Health has been shown to consist in regular, vigorous, functional action, resulting in perfect nutrition; disease, to be irregular, imperfect functional action—changed nutrition. In the one, all the chemical and vital actions essential to man's physical well-being go on normally; in the other, the vital functions deviate more or less from the normal standard.

I have endeavored to show that the Movement-Cure controls and harmonizes the vital processes, supplying to them a stimulus which is strictly in accordance with the principles of sound physiology. It is,

therefore, a mode of treatment, at once scientific and rational, entirely worthy both of public and professional confidence.

It is highly curative in many other chronic affections besides that specially mentioned here, frequently achieving remarkable results in diseases confessedly beyond the resources of the common modes of treatment.

CONSUMPTION.

THE early symptoms of this formidable disease are too often overlooked, or, at least, attributed to other than their real causes ; in fact, the sufferer usually ignores them as long as possible.

It is astonishing how often consumptives succeed in blinding themselves regarding the true nature of their disease. They may frequently be observed well advanced in the second stage, still imagining that all their difficulties are caused by some trifling affection of the throat.

At first, slight pain is usually felt in the lungs. After amounting only to a feeling of uneasiness, a sense of tightness across the chest is experienced—the breath becomes shortened. This is noticed when any extra muscular exertion is attempted. There is often a sense of chilliness during the forepart of the day, with a feeling of feverishness towards evening. The circumference of the chest diminishes, its walls lose their elasticity, and become depressed above and

below the collar-bones ; flesh is slowly but steadily lost ; the strength becomes impaired ; digestion is less vigorous than formerly ; nausea and vomiting are sometimes present ; a slight tickling cough exists on rising ; the pulse becomes habitually more frequent, beating ninety, one hundred, or more times per minute. Bleeding from the lungs is common. In many cases, however, this never occurs. In women, the first symptom that excites alarm is often the gradual cessation of the menses.

In fact, if a young adult has an obstinate cough that commenced without being accompanied by cold in the head ; a cough at first dry, but subsequently attended, for a time, by a glaucous or watery expectoration ; who has wandering pains about the chest, and who loses flesh even slightly, he is, in all probability, consumptive. If, in addition to these symptoms, he has raised blood, even in very small quantities, there can be little room to doubt that this disease is being developed. The symptoms characterizing the later stages are too well known to require mention. A few of the early indications only are noticed. To these the attention of the reader is particularly directed, because it is of the utmost importance to note the beginnings of this disease. Then proper treatment will very frequently be followed by excellent results ; but after consumption is firmly seated it too often resists the best directed efforts.

Causes.

Whatever tends to impoverish the blood and depress the vital powers has a strong tendency to develop pulmonary disease, especially in persons predisposed thereto; although it is undoubtedly true that the children of consumptive parents are somewhat more liable to the development of this affection than the children of healthy parents, carefully-collected statistics prove that hereditary transmission has much less influence than is generally supposed.

Pathology of Consumption.

It has frequently been observed that the tendency to consumption is always greatest in persons whose respiratory organs are imperfectly developed, or the efficiency of whose breathing powers have become impaired by artificial causes. I am convinced the root of the whole difficulty lies here. The breathing capacity of such persons is below the requirements of the system; the chest-walls lack the normal degree of elasticity; the respiratory muscles, in common with the muscular system generally, are weak. Thus, although there is no perceptible shortness of breath, the blood is insufficiently supplied with oxygen. These facts point to a simple and rational explanation of the origin of tubercular matter, as follows: The changes that food undergoes in the complex process of digestion are not all that is required to fit it for assimilation. It must pass by absorption into the

current of the venous blood, ever pouring toward the lungs, there to be exposed to the action of oxygen, by which the milky-looking fluid called chyle instantly becomes rich, scarlet, arterial blood, laden with materials admirably fitted to build up the wasting tissues. Now it requires a given quantity of oxygen to neutralize a given quantity of digested food. If this supply is deficient, it is manifest that some portion of the food will either partially, or not at all, undergo the needed vital change. This imperfectly vitalized blood, leaving the lungs, passes through the left side of the heart into the arterial and capillary circulation, in the latter of which it is presented to the tissues for assimilation.

Now, as the blood must give up as fast as it receives, in order to preserve its own proper constitution, the crude matter it contains is deposited in various parts of the body, forming tubercles. When this occurs at the base of the brain, they give rise to that fatal disease of children known as hydrocephalus, or water on the brain. When they fall on certain glands forming a part of the alimentary tract, they produce another disease common among children, marasmus. When they are deposited in the knee-joint, they cause white swelling, and when they accumulate in the lungs they give rise to pulmonary consumption. After tubercles have been deposited in the substance of the lungs they soften, break down and are cast off, giving rise to cough, expectoration, etc., that characterize the later stages of consump-

tion. Patients suffering from such symptoms imagine if they could but get rid of these, all would be well; but the true difficulty lies deeper. It is the nutritive processes that are at fault. Out of proper food consumptives fail to make good blood. Instead of this fluid containing materials suited to renovate the body, it gives origin to deadly tubercles. This fundamental fault in the organizing process is due to lack of oxygen in the blood, directly traceable to inadequate respiratory power, either congenital or acquired.

The following table, exhibiting the gradual decline of the breathing capacity in consumption, is the result of investigations made by Dr. Hutchinson, an eminent English physician. The quantity of air that can be expired, after the most complete inspiration, he terms the vital volume, or vital capacity :

Height.			Vital capacity in Health.	In First Stage.	In Second Stage.	In Third Stage.	
Ft.	In.	Ft.					In.
5	0	to	5 1	174	117	99	82
5	1	"	5 2	182	112	102	86
5	2	"	5 3	190	127	108	89
5	3	"	5 4	198	133	113	93
5	4	"	5 5	206	138	117	97
5	5	"	5 6	214	143	122	100
5	6	"	5 7	222	149	127	104
5	7	"	5 8	230	154	131	108
5	8	"	5 9	238	159	136	112
5	9	"	5 10	246	165	140	116
5	10	"	5 11	254	170	145	119
5	11	"	6 0	262	176	149	123

The preceding table shows that, even in the first stage of consumption, the vital capacity or breathing power declines nearly one-third; in the second and third stages the deficiency is still more marked. The powers of life fail for want of fresh air, or rather its active principle, oxygen gas; the blood is imperfectly purified and vitalized; it circulates irregularly, leaving the surface of the body and extremities to form pulmonary congestions. The proper digestion and assimilation of food becomes impossible, and bodily nutrition imperfect.

It is quite common to observe consumptives, the circumference of whose chests have decreased in size from one and a half to three inches since the beginning of their disease. In such persons the motions of the chest-walls are also scarcely perceptible, even during forced breathing. The true remedy for consumption is to increase the capacity of the chest, restore the mobility of its walls, so that they will readily and fully expand with every involuntary respiratory effort, and invigorate the respiratory muscles. Now, there are no means so admirably adapted to secure these objects as localized movements. In proportion as these indications are accomplished, the breathing becomes calm and deep, even when exercise is indulged in; the blood is abundantly supplied with oxygen; the vital functions no longer languish for want of their natural stimulus, and the symptoms of disease give place to the evidences of returning health. Consumptives do not need medicated air, condensed air,

artificially oxygenized air—they need fresh, pure air, and power to breathe enough of it.

Auxiliary Hygiene.

The consumptive invalid must have pure, fresh air to breathe night and day. His sleeping apartment should be ventilated so that the air inside, during the whole night, is as pure as the atmosphere out of doors. In the absence of scientific arrangements for ventilation, this may be accomplished by letting down the windows from the top to admit the air, and having an open grate or other aperture to permit its escape. In winter, the foul air is effectually removed by having an open coal fire burning all night. A steady current of air is thus produced from all parts of the room towards the fire, thence up the chimney. The invalid's bed should be so placed that he will not be directly exposed to any draught caused by the effort to secure ventilation.

Flannels should be worn summer and winter. The underclothing worn by day should not be slept in at night; they should be put off on retiring, and hung up where they will be well aired.

The diet of the consumptive should be simple and nutritious. No strict rules can or ought to be laid down. He should partake freely of any good solid food that best agrees with him.

A tepid bath should be taken twice a week in a warm room during winter, and three or four times a week in summer. The chest should be bathed with

cold water every morning, and thoroughly rubbed with a coarse towel.

Movements are not intended to take the place of ordinary exercise, such as riding on horseback or in a carriage, or walking. These may be indulged in with moderation, care being taken never to continue them long enough to induce fatigue, nor with sufficient violence to increase the frequency of the pulse.

Directions concerning the Application of the Treatment.

1st. An invalid proposing to employ the following medical treatment must secure an operator sufficiently intelligent to understand what is to be done, and with adequate strength to do it.

2d. The movements should be applied at an interval of not less than one hour and a half after a meal.

3d. The morning is the best time ; then the system has more recuperative power than in the after-part of the day.

4th. A period of rest from both mental and physical toil is desirable before receiving movements, otherwise their beneficial effect will be much less marked.

5th. After the reception of a passive movement the patient will rest two or three minutes, and four or five minutes after an active one. This is necessary to guard against fatigue, as well as to allow the specific effect of each movement time to be developed.

6th. The invalid should not indulge in either read-

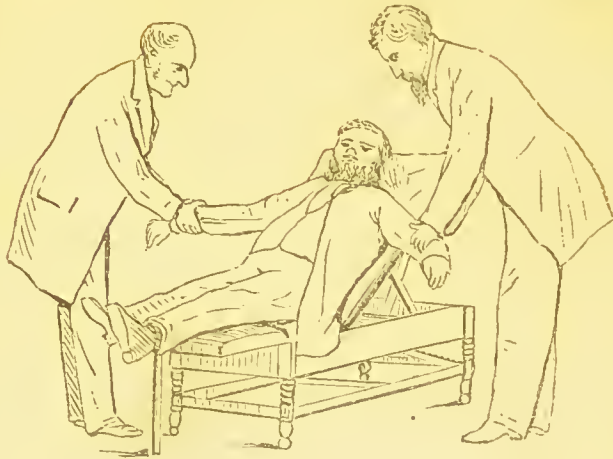
ing or exciting conversation while receiving treatment.

7th. The dress should be worn quite loose at all times, but particularly so while receiving treatment, so as to permit the unrestrained action of the respiratory organs.

8th. After treatment, patients generally feel an inclination to sleep, which should be indulged in. They will awake greatly refreshed.

9th. The peculiarly curative effect of the movements here prescribed for consumption depends largely on the order in which they are applied. This must be strictly adhered to, beginning with the first and continuing on to the last, except in the case of very feeble persons, when the movements numbers six and eight should be omitted for the first week or ten days. By this time the circulation towards the skin and extremities will have become established. These movements may then be used.

10th. Previous to beginning treatment, the patient should measure his chest accurately, observing what the circumference is when expiration is complete, and also its size during complete inspiration. Preserve the dimensions for future reference.



First Movement.—Falling the Arms.

The patient may either recline on a lounge constructed for the purpose, with an assistant operating at the same time on each arm, or he may sit erect on an ordinary chair, with his arms hanging passively by his side. The operator will then place his extended hands on each side of the arm, and roll the tissues thereof quickly to and fro, at the same time gradually slide his hands downward, keeping up the friction until the whole arm, from shoulder to wrist, has been operated on. This should be repeated on each arm six or eight times, always beginning at the shoulder and proceeding downward to the hand.

EFFECT.—The blood in the capillaries is pressed into the minutest ramifications of these vessels in greatly augmented quantities, and gently urged on-

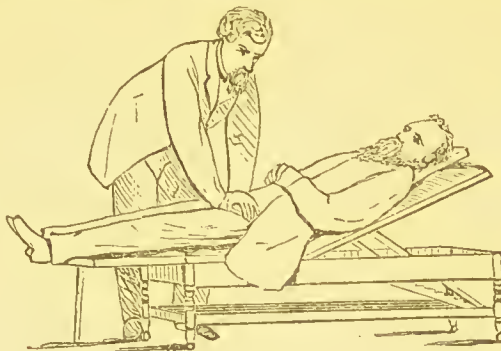
ward into the veins, through which it must pass to the heart, and lastly to the lungs for aeration. As soon as the pressure is removed the capillaries are refilled with fresh blood from the arteries supplying the part ; the blood circulation thus secured in the part subjected to the fulling is so perfect that the patient will feel the whole limb, to the finger ends, tingling with the vital current. At the same time, waste matters are made to pass by endosmosis into the venous circulation to be removed from the body. The nutritive materials contained in the blood are brought to the parts that are also placed in the best possible condition to assimilate them.



Second Movement.—Vibration of the Leg.

The patient reclines in a perfectly easy position. The operator, who is seated before him, supports the leg, extended at full length, by grasping the heel ; with the other hand, he rapidly shakes the toe back and forth. A quick, vibratory motion is thus communicated to the leg.

EFFECT.—This movement causes attrition of the elementary fibres and cells of the muscular and other tissues, brings together waste matters seeking union, by which their ultimate removal from the body is facilitated, and increases the blood-circulation and nutrition of the parts subjected to the movement.



Third Movement.—Fulling the Thighs.

The patient is seated as represented in the cut. The operator will place both hands on the thigh, at the groin, making as firm pressure as the patient can comfortably bear, and give the parts a rolling motion back and forth, gradually sliding down the hands until the knee is reached ; begin again at the groin ; repeat six or eight times on each thigh.

EFFECT.—Same as that caused by movement No. 1.

Fourth Movement.—Rotation of the Foot.

The patient is placed in a reclined sitting position ; his leg is extended, the calf resting on both knees of

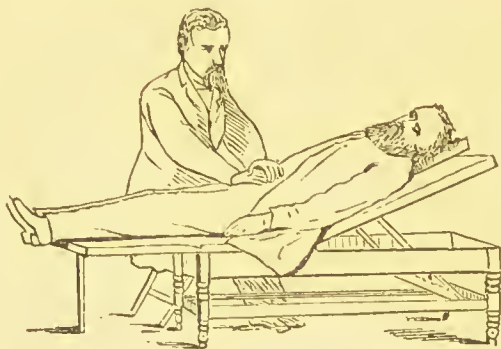


the operator, who fixes the patient's leg by grasping it with one hand, while he applies the open palm of the other to the toe of the boot, the heel of which should project over the operator's knee, so as to allow it to move with perfect freedom. The operator will then cause the point of the boot to describe a circle as large as possible, without straining the ankle-joint, first from left to right, then from right to left, ten or twelve times each way. Continue the movement three to five minutes on each foot.

EFFECT.—This movement is actively derivative. Each time the toe describes a circle, all the muscles below the knee are alternately passively stretched and relaxed. Now, muscular contraction always increases the demand for blood in the acting muscles. When all the remainder of the body except the parts being acted on are at rest, the system is then able to respond more promptly and effectually to the call for blood at that particular point, there being, at that

moment, no urgent demand for it elsewhere, the vital current is thus made to flow downward to the feet. The cold, clammy extremities of consumptives are thus readily warmed, although their temperature would not have been increased by as much walking as the invalid had strength to take.

The perfect circulation thus induced also has the remarkable effect of relieving the disagreeable burning in the soles of the feet when it exists, reducing it to a genial permanent warmth.



Fifth Movement.—Kneading the Bowels.

When receiving this manipulation the patient should lie on his back, having the knees and shoulders slightly raised. In this position, the abdominal muscles, being slightly relaxed, are in the best condition to permit the digestive organs to be influenced by the movement. After the patient becomes accustomed to the treatment, and the abdominal tenderness that often exists at first has been removed, the arms may be placed

over the head and the limbs extended. The operator places the palms of both hands on the abdomen, and, pressing firmly, will roll it from side to side, always being careful to make the pressure from below upward and inward.

EFFECT.—Under this treatment the muscles forming the walls of the abdomen acquire strength ; the abdominal contents will be lifted up and supported in their proper position ; the alimentary tube invigorated, and its vermicular motions increased ; congestion removed from the mucous membrane lining the digestive organs ; constipation relieved ; the digestion and absorption of food promoted, and the appetite improved.

Sixth Movement.—Angling the Arms.



All the preceding operations, it will be observed, are passive ; their application involves no exertion on the part of the patient. This, however, is an active movement. The main objects aimed at by the former are to relieve pulmonary congestion and secure a perfect blood circulation generally : these are always the first indications in the treatment of consumption. After the excess of blood obstructing the lungs and other internal organs has been made to flow towards the surface, imparting a

genial warmth to the skin and extremities, the second indication, viz, to develop the respiratory capacity, claims our attention. This is generally effected by active movements, the present one being admirably adapted to that purpose.

The patient may either sit erect, as in the cut, on an ordinary low-backed arm-chair, or he may recline on a lounge, having the shoulders elevated at an angle of about twenty-five degrees. The patient will then place his hands at his shoulders, with the arms close to the side. The operator, who stands behind him, will now grasp his hands, and slowly and steadily draw them out at full length, the patient meanwhile resisting firmly, without putting forth all his strength. After waiting a moment, the patient will draw down his arms to the commencing position, while the operator resists. This should be repeated two to six times up and down, according to the strength of the invalid.

EFFECT.—All the respiratory muscles on the anterior part of the body are gently but effectually stretched, the circulation in them improved, and their strength increased; rigidity of the thoracic walls is overcome; the chest vigorously but safely expanded; the air is made to penetrate and inflate collapsed portions of the lung, and dislodge the pus and mucus with which such portions are obstructed.

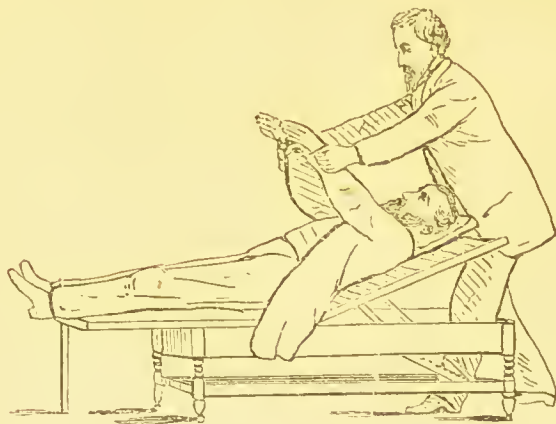
Seventh Movement.—Drawing the Shoulders Backward.

The patient will sit erect on a stool, his arms hanging passively by his side. The operator will then place his knee, protected by a cushion, on the middle of the patient's back, at the lower border of the shoulder-blades, and grasping the patient's arms near the shoulders, draw them slowly and firmly backward, at the same time pressing steadily forward with his knee.

EFFECT.—With due caution, this movement may be applied to the most delicate invalid. It safely but powerfully expands the chest and invigorates the respiratory muscles. The effect on the patient's feelings is most grateful; it affords the consumptive an immediate sense of relief; he feels as if a load had been lifted from his chest.

Eighth Movement.—Arm Pumping.

The patient reclines on a couch, with the shoulders slightly raised; his arms are extended parallel to



each other, and at right angles with his body. The operator, standing behind the patient, will now grasp his arms at the wrist, and draw them backwards and downwards until they are parallel with his body, the patient meanwhile resisting firmly and steadily. After resting a moment, the operator will then resist while the patient returns the arms to the commencing position.

EFFECT.—The same as in movement No. 6, but much more powerful.

Ninth Movement.—Percussion on the Back.

When receiving this manipulation, the patient should bend forward and lean his arms on some firm object. The operator will then apply from fifty to

one hundred light, rapid blows, with the open palm, over the whole back. After the invalid becomes ac-



customed to the percussion, it may be applied somewhat more heavily.

EFFECT.—This operation sends a succession of waves through the lungs, which have the important effect of expanding the shrunken air-cells, causing contraction of the pulmonary capillary blood-vessels, removing congestion, and dislodging the pus and mucus obstructing the air-cells and bronchial tubes.

Tenth Movement.—Felling the Back.

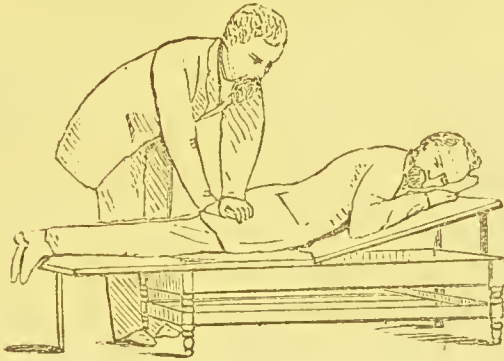
The patient lies in the prone position, as shown in the accompanying cut. The operator places the pulp of his fingers on a part of the skin and causes it to



vibrate to and fro on the tissues beneath for a few seconds, when the hands should be shifted to an adjoining portion of the integument, and the vibration repeated until the whole of the back has been operated on.

EFFECT.—This operation is most grateful to the patient; it exercises a decidedly soothing effect on the nervous system generally, through the influence exerted on the spinal cord, besides exciting an agreeable warmth in the parts, due to improved blood circulation.

**Eleventh Movement.—Fulling the Posterior Part of the
Lower Extremities.**



The patient lies in the same position as in No. 10. The operator will apply to the whole posterior aspect of the limb the treatment described in No. 3.

EFFECT.—This is analogous to that produced in movements Nos. 1 and 3.

GENERAL EFFECTS OF THE FORE-GOING TREATMENT.

FIRST.—Physiologists tell us that, in health, the whole mass of the blood in the system, equal to one-eighth of the total weight of the body, passes through the lungs in somewhat less than three minutes. The pulse will then be of an average, healthy frequency; but when, as in consumption, the respiratory power is deficient, nature instinctively, so to speak, hurries the blood through the system more rapidly, in order to bring it more frequently and perfectly in contact with oxygen in the lungs. Under such circumstances, the pulse necessarily becomes more frequent. For instance, in the table by Dr. Hutchinson on page 31, it is stated that a man standing 5 feet 9 inches to 5 feet 10 inches has generally a vital capacity of 246 cubic inches in health; his pulse will then average about 70. During the first stage of consumption, his vital capacity will have diminished to 165 cubic inches; his pulse will then beat about 90 to 100. During the second and third stages, when his vital volume has declined to 140 and 116 cubic inches respectively, the frequency of his pulse will be greatly augmented. But the Movement-Cure has remarkable power in correcting this. The application of a single prescription often has the effect of reducing the pulse from 12 to 16 beats per minute. In proportion as

the respiratory power improves, it becomes permanently reduced in frequency. These facts strongly corroborate the theory here advanced, that the disease under consideration is due to diminished breathing capacity. If we suppose that the vital volume of a consumptive can be increased by only one and a half cubic inches at each inspiration (certainly a very moderate amount), he would then inhale 27 cubic inches more air per minute, 1,620 more per hour, or fully 22 cubic feet in twenty-four hours; an amount that, in many cases, would promptly stay the progress of the disease, and eventually lead to its removal.

SECOND.—There are certain physical signs that indicate the presence of tubercular deposit in the lungs. In a large number of cases treated by localized movements, I have observed those signs, either in part or totally, disappear and give place, more or less perfectly, to the signs indicating a healthy condition of the lung tissues. Therefore, I believe that the treatment here advocated can successfully oppose the deposition of tubercles, as well as effect their absorption after their presence has been demonstrated.

THIRD.—The Movement-Cure presents to the consumptive invalids two very encouraging features: *First*, They do not require to wait weary months hoping for improvement. In many cases, this is quite apparent during the first week or ten days; and even those who are so far advanced that they do not ulti-

mately recover, rarely fail to be decidedly benefited in twelve or fifteen days. After a few applications of a prescription of movements, the skin and extremities become warm and more free from feverishness; the sufferer is conscious that his breath penetrates into and expands every portion of his lungs. If a tendency to hemorrhage exists it is checked, the cough gradually abates, and the matters expectorated lose their thick, yellow character, and assume the appearance of ordinary mucus; the sleep becomes sounder and more refreshing, night-sweats no longer occur, the appetite improves, strength increases, flesh is gained, and despondency is supplanted by hope and courage. *Second*, When a consumptive gets well by the Movement-Cure, he has good reason to hope that his recovery will be permanent, because the treatment is directed not merely to the removal or modification of symptoms, but to the correction of the constitutional vice from which the disease originates.

ILLUSTRATIVE CASES.

CASE 1.—Mr. R. J. had been gradually declining in health for about three and a half years. A cough had existed during the whole of that period, which had become very severe when he applied for treatment. Every morning on awaking he raised quantities of thick, yellowish matter, and continued to do so at intervals throughout the day. He had little appetite; lost flesh and strength steadily. His breath was so shortened that he found it impossible to go up an ordinary pair of stairs. Heat fever and copious night-sweats had existed for months. His chest measured only $38\frac{1}{2}$ inches; during health its circumference had been fully 41 inches, and its walls were quite rigid. A physical examination showed that tubercles were extensively deposited in the apices and upper lobes of both lungs, and that the process of softening had made considerable progress. During the three and a half years which his disease had existed, it had advanced only into the second stage. Two week's treatment produced an appreciable improvement, which increased, day by day, until, at the end of two months, he was so well that further treatment was deemed unnecessary. The physical signs of the presence of tubercular deposit in the lungs, although not entirely removed, were greatly ameliorated; the air now penetrated into and dilated the

parts of the lungs that had been the seat of active disease. During the two years that have since elapsed, his disease has manifested no tendency to return. Although not quite so strong as in his best days, he is actively engaged in business, which he was previously obliged to abandon on account of failing health.

CASE 2.—Mrs. R., of New York, began to manifest symptoms of pulmonary consumption five years ago. She had change of air, traveling extensively both at home and abroad; had consulted many eminent physicians, yet year by year she continued to grow gradually worse. At the time she applied for treatment both she and her relatives thought she could not survive a month. The gravity of her symptoms fully justified the conclusion to which they had arrived. Her pulse was from 110 to 115. She was much emaciated; respiration quick and labored; almost complete loss of appetite. When she did partake of even the simplest food, it caused acute distress during digestion. For a week she had slept very little, being harassed by an almost ceaseless cough; she was too weak to endure the fatigue of carriage exercise. Notwithstanding the extreme gravity of her case she improved from the first. Ten weeks' treatment sufficed to get her into a very comfortable state of health, in which condition she remained nearly two years, when her disease again began to progress, and she died.

CASE 3.—Miss N. had previously lost two sisters by consumption. Her health had been failing for more than a year. At the time she resorted to the Movement-Cure she exhibited all the symptoms of the first stage. There existed unquestionable physical evidence of the presence of tubercles in the apex of the left lung; but there was no softening, the right lung was healthy throughout. Before she had received the movements a week, she reported herself better. She was under treatment less than two months, when not only had every symptom entirely disappeared, but the physical signs indicating the presence of tubercles in the lungs were removed; the high-pitched, harsh, breathing sound at first heard had given place to the low-pitched, breezy, respiratory murmur of perfect health. She continues to the present day enjoying robust health.

CASE 4.—Miss W. had declined in health for about fourteen months, when she was advised to try the treatment by Swedish movements. She had nausea, vomiting, loss of appetite, shortness of breath, night-sweats, slept badly, had a severe cough, pain in the chest, and she had raised blood very frequently, in small quantities, during the last ten months. Considerable tubercular deposit existed at the apex of the left lung, but there was no evidence of softening. This lady made marked progress during the first ten days. Less than two months daily treatment sufficed to remove every symptom of consumption. Her

periods had stopped, but were restored to a perfectly natural condition. Since then her health has been entirely satisfactory.

CASE 5.—Mr. B., a gentleman sixty years of age, had first raised blood about seven years ago. Since that time he was sometimes better and at other times worse; on the whole, however, he declined from year to year. He was frequently and strongly urged by a friend of his to try the Movement-Cure, which he very reluctantly agreed to do, having long ago lost all faith in medical men and their capacity to cure his difficulty. When he began treatment he was worse than he had ever been; yet, after two months' daily attendance, he was so well as to be able to undertake long journeys on business, although he had previously been afraid to leave the town in which he resided, lest he would not be able to return. The results, in his case, were very satisfactory to himself and his friends. He frequently declares his astonishment how any treatment, of apparently so simple a character, can possess such curative power in so grave a disease as consumption.

CASE 6.—Mr. G., a gentleman from Canada, aged 27, applied for treatment, stating that he had been in good health until two months previously; yet, at the time he presented himself, his symptoms were of a grave character. The upper part of the right lung was much diseased; the deposition of tubercles had

also commenced in the left lung. For a few days, at first, the treatment seemed to affect him favorably, but he soon began to decline in spite of all that could be done.

REVIEW OF THE FOREGOING CASES.

Case 1 had been progressing during three years, in which time his disease had advanced well into the second stage. The results attained are what may fairly be called a cure, in the ordinary acceptation of the term, although it is probable he will eventually die by consumption.

Case 2 had been five years in passing into the third stage. Her disease was checked, she was rendered quite comfortable, and a fatal termination deferred nearly two years.

Case 3 was only in the early part of the first stage. After being ill one year, her recovery was complete.

Case 4. The condition of this young lady was similar to that of Miss N. Her treatment also resulted in perfect recovery.

Case 5 had passed into the third stage in the course of seven years. He was so much benefited that I think it is likely he will attain to the age of three-score years and ten before his disease terminates life.

Case 6 had declined so rapidly that he had attained the second stage in two months. Nothing effectual could be done for him.

Many cases similar to the foregoing could be cited,

but these are sufficient to illustrate the points on which I wish to throw light concerning the curability of consumption.

This disease has been divided into two classes—acute and chronic. The acute variety runs its course in from three to twelve weeks; the chronic usually lasts from one to three years, and may continue five, ten, and even twenty years. Acute consumption is fatal in almost every case. The further a case of chronic phthisis is removed from the acute type, the greater is the probability of recovery. That is to say, if a consumptive has passed rapidly through the first into the second stage, his case will probably terminate fatally; if his disease has progressed slowly, although it has arrived at the second stage, he stands a fair chance of recovery, and a certainty of being materially benefited, life being not unfrequently prolonged for years. If treatment is applied to such an invalid during the first stage he can be cured.

There are multitudes of persons who are conscious of being, more or less, strongly predisposed to pulmonary tuberculosis, in whom the development of consumption would be rendered all but impossible by a thorough course of the treatment here advocated.



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